

## Tech Tips

2005

*by Chuck Westfall*



**Q: Is it safe to use studio strobes or other non-dedicated flash units on my digital SLR?**

A: The answer depends on the trigger circuit voltage of your flash vs. the acceptable trigger circuit voltage level of your camera. (Trigger circuit voltage is fed to the camera through your flash sync cable or hot shoe, and can be measured with a voltmeter.) Many professional digital SLRs, including all of the EOS-1 class models as well as the 20D, can handle trigger circuit voltages up to 250V because they generate their X-sync signals electronically, but older models like the EOS 10D, D60 and D30 generate X-sync mechanically through their shutter units. Cameras of this type typically should not be subjected to trigger circuit levels higher than 6 volts. If you are not sure of your camera's TCV rating, we suggest that you check with the manufacturer before connecting a studio strobe or non-dedicated flash. Independent accessory manufacturers offer relatively inexpensive "sync filters" that reduce TCV. These devices can come in handy when you need them.

**Q: I am experiencing backfocus problems with my digital SLR. What should I do?**

A: The first step in troubleshooting this issue is to isolate which component is causing the problem: camera or lens. Take some test shots first, and then examine the results. If the camera has a consistent focusing problem with several different lenses, then it's reasonable to assume the camera needs an adjustment. If you are getting sharp results from most lenses but not all, then it's reasonable to assume that the lens in question may need an adjustment. The next step is to have the faulty item(s) calibrated by a qualified service technician.

The calibration procedures for each component are done according to the known specifications for that component, not for one component to match another. First, the camera body is calibrated with a "tool lens," i.e., a standard lens known to be operating correctly according to design specifications. Once the body is autofocusing correctly with the tool lens, then the camera can be checked against other lenses. Calibrating a lens does not damage its performance with multiple camera bodies as long as the calibration standards for the lens are independent from the calibration standards for the body.

**Q: Last month, you mentioned that autofocus SLRs are calibrated with a "tool lens." Can you provide more information on the calibration procedure?**

A: AF system calibration involves a series of tests to determine the positioning accuracy of mechanical components such as the image sensor and reflex mirror assemblies. Once these potential problem issues have been eliminated, test images are taken using a "tool lens" with known performance characteristics. (The tool lens is typically a standard 50mm lens that has been verified to be performing as closely as possible to its design specifications in terms of AF accuracy.) When discrepancies are detected in the test images and mechanical issues have been eliminated, adjustment software is sometimes used to calibrate the camera's AF system. This method enables technicians to ensure that the camera is performing well within tolerances for AF accuracy. Once a camera has been calibrated with the tool lens, it becomes possible to check the performance of other lenses the photographer may have.

Here are some more details on the positioning accuracy of mechanical components like your camera's reflex mirror: Although this component and its related parts, like the sub-mirror that directs light to the AF sensor mechanism in the bottom of the camera, are checked during assembly to ensure that they are performing within stringent design tolerances, they are moving parts and therefore subject to normal wear and tear. Just as race car drivers need to maintain their cars if they want to keep them in top-notch condition, photojournalists should have their cameras checked regularly to make sure that everything is working according to spec. Be sure to check with your camera manufacturer to learn the range of after-sales service they provide. Several top manufacturers provide special services for full-time professional photographers.

**Q: A customer of ours has bought an EOS-1D Mark II for sports photography. He is trying to set the camera so it will only fire in AI Servo mode when the image is in focus. He has set the custom function, which enables this (drive priority I think?) However, it still seems to be firing when the camera is not in focus. We tried another in store and it behaves in exactly the same way.**

What seems to be happening is that when the shutter is pressed fully and the camera is refocusing between two definite AF locks (high-contrast subjects within range), it will not fire. But when AF is impossible (no contrast, too close, etc.) it will start firing again. Selecting all or different AF points does not help.

This wouldn't normally be a problem but he uses the camera for motocross photography, when the subject is only in view for a few seconds. He is finding that the one shot where the subject is perfectly framed is out of focus.

Is this normal, and is there any workaround he can use? I've told him it probably is quite normal and useful for pros, where for that split second any picture is better than no picture, but he's not having any of it!

A: None of the EOS cameras are designed to allow focus priority shutter release for single shots in AI Servo AF. This also applies to the first shot of a continuous burst in AI Servo. Canon's philosophy on this is that the camera should never be allowed to prevent the photographer from controlling the instant of shutter release in AI Servo, even if it means that single shots or the first shot in a burst may be slightly out of focus. Frankly, I don't expect this stance to be changed any time soon, if ever. I wrote an article describing AI Servo AF as it related to the original EOS-1, and that information has been preserved on the Web here:

<http://photonotes.org/other/ai-servo.html>

AI Servo performance has greatly improved since the original EOS-1 was introduced in 1989, and the EOS-1D Mark II is currently Canon's best performer in this area. Compared to the original EOS-1 camera, there are now 45 focusing points (including 7 cross-types) compared to only one, and the speed of the camera's circuitry is substantially faster. The 1D Mark II even incorporates two dedicated CPUs for AF, one for calculations and another to control lens drive. But it is still up to the photographer to control shutter release timing.

For best results, we strongly recommend that photographers press the shutter button halfway at least a second or two prior to shutter release, and to keep the button pressed halfway until pressing fully to take the picture. This technique allows the camera's AF system to track the subject more effectively, reduces the time lag before exposure begins, and increases the odds of getting sharp photos as consistently as possible in AI Servo mode. Another article covering this topic in depth is available here:

[http://photoworkshop.com/canon/EOS\\_Digital.pdf](http://photoworkshop.com/canon/EOS_Digital.pdf)

**Q: I had many problems with servo AF on EOS-1Ds and it took ages for anyone in U.K. to accept there were issues. Now using EOS-1Ds Mark II and 1D Mark II, [they] seem much better at focus tracking. Have the EOS-1Ds focus tracking problems been eliminated in these models and what should I set them to in personal settings to achieve the best/fastest servo AF? Are they as fast/accurate as the EOS-1v was? U.K.-based car photographer.**

A: Each EOS-1-class digital SLR has its own predictive AF algorithms, but I think it's fair to say that both of the Mark II cameras are at least as good as the EOS-1v, and much better than the original EOS-1Ds in that area. The 1D Mark II is Canon's best, but the 1Ds Mark II is also excellent, as I discovered when I was testing it last year at the American Le Mans auto race event. The most significant limitation is the 4 fps maximum framing rate of the 1Ds Mark II vs. 8.5 fps for the 1D Mark II. That's important for race cars, but less so for many other moving subjects. For tips on camera settings and custom functions to achieve optimum results according to the type of photography you do, be sure to check out the following document:

[http://photoworkshop.com/canon/EOS\\_Digital.pdf](http://photoworkshop.com/canon/EOS_Digital.pdf)

**Q: Is it true that all digital images should go through a sharpening procedure and that we should not expect them to be sharp coming from the camera? If so, what is your recommendation for a basic sharpening setting? Will the sharpening issue improve with future digital cameras? Thanks for your response.**

A: Sharpening is important for almost all digital images, but it's important to recognize that optimum sharpening levels can and do vary, based on output size, viewing distance and printing methods, not to mention personal taste. There are dozens of sharpening methods, ranging from in-camera settings to post-processing techniques.

Digital SLRs vary significantly in terms of range and default settings for in-camera sharpening. (Keep in mind that in-camera sharpness settings do not apply to RAW files because they can be overridden during conversion. Therefore, the following recommendations apply mostly to in-camera JPEGs.) Photographers who wish to reduce the need for post-processing of in-camera JPEGs should explore the use of higher in-camera sharpness settings. However, it's usually best to reduce or shut off in-camera sharpening if you plan to apply it during post-processing. As a rough guideline, we usually recommend Unsharp Mask settings of 300%, 0.3 pixel radius and 0 pixel threshold for letter-size prints from EOS Digital SLR images, but please feel free to vary these settings according to your needs and/or personal taste.

For maximum flexibility, it's a good idea to save an unsharpened version of each image file so that you're always working from a "clean slate" so to speak, should

there ever be a need or desire to apply a different sharpening technique at a later date or for another application. (RAW files are ideal for this purpose.) Remember that sharpening an image is like using permanent ink: it's easy to apply, but difficult if not impossible to remove.

**Q: I need some help with a question that my in-laws laid on me at dinner last night: Which digital P&S has minimal/no appreciable shutter lag? My sister-in-law currently has a compact digital camera but complains of the shutter lag and its inability to record the activities of a toddler, something with which you may have some sympathy.**

A: I'd love to be able to tell you that there's a point-and-shoot digital camera that has eliminated the shutter lag issue, but to the best of my knowledge, it doesn't exist yet. With most compact digitals, shutter button response can be drastically improved by pressing halfway until focus locks, then pressing the rest of the way to shoot. But this technique requires practice, and some people just don't get it. Flash recycling time is another potential problem: Most compact cameras are set for automatic flash in low light by default, and they usually take at least 3 to 5 seconds to charge up. This can be problematic when you are trying to shoot spontaneously.

The best solution for most amateur photographers who are sensitive to these issues is a digital SLR, but it doesn't have to be a full-blown professional model. Affordable DSLR cameras from manufacturers like Canon, Nikon, Pentax, Olympus and Konica-Minolta fit the bill. They are usually small and light compared to pro models, sometimes weighing less than 1.5 lb. complete with the standard zoom lens, battery and memory card. They can be set for fully automatic operation (most have manual overrides, too), and they have no noticeable shutter lag. Picture quality is typically better than P&S digitals, especially at high ISOs, and plenty of optional lenses, flash units and other accessories are available. Best of all, most current entry-level DSLRs cost less than \$1,000, which puts them within financial reach of many photo enthusiasts.

**Q: I'm going to be attending RIT (Rochester Institute of Technology) in about a month. I ask this to all professionals I know who went there and graduated. Can you give me any advice on RIT and life after RIT, such as getting a job in this competitive photography world? Thanks!**

A: It's been a long time since I graduated from RIT, but I've kept in touch with the faculty over the years. They're a great bunch of folks, and I've enjoyed conducting Canon workshops for some of them twice in the fairly recent past. Based on the new curriculum that Professor DuBois has come up with, I am sure that incoming students like you will be kept up to speed on developments in digital imaging technology, without losing sight of the photographic fundamentals that remain important to understand regardless of the type of camera they use.

I've always felt that RIT provided me with an exceptional foundation of technical knowledge that I have found to be particularly useful for a successful career in photography. That knowledge has served me well not only for my work as a photographer, but also for my work with Canon. If you apply yourself while you're at RIT, you'll be able to learn a lot about the craft as well as the technology of imaging, and you'll also have the opportunity to meet many friends and mentors who will be happy to help you. Notice that I say "opportunity," because no one is going to hand you a successful career, or even a college education, on a silver platter. It's your responsibility to be socially interactive, and to treat others the way you'd like to be treated, with dignity and respect.

If you're serious about a career in photography, my best suggestion would be to realize that no matter where you fit in, it's ultimately a business environment of one kind or another. Therefore, it is important to understand at least the basics of business together with the basics of photography. RIT is a great environment for academic learning, but you'll also find that you can learn a lot about the business of photography by working for others during your summer vacations and/or on weekends. RIT has a great program for "summer interns" with various corporations around the USA, and you may be able to come up with some other contacts on your own.

Once you are able to combine some practical on-the-job experience with your academic background, I'm sure you will be able to find a career that you can be proud of. It may turn out to be different than what you expected before you began, but life has a habit of working out like that. Good Luck to you!

**Q: I am off on an assignment with an EOS-1Ds Mark II. It is much better on battery life than the 1Ds, which is good, but I am going to an island where there will be no possibility of recharging and I will be there 5 days. I have 3 batteries, so what is the best way to minimize the power consumption so I can maximize my shooting time?**

A: Here are a few suggestions that may help:

1. Select a reasonable setting for the 1D Mark II's 'Auto Power Off' function. Because it only takes 0.3 seconds for the camera to "wake up" after powering down, you might want to consider selecting the 1-minute setting. There is no need to shut the camera off completely with the main switch except when you are changing memory cards or when you're done for the day, and the 'Auto Power Off' function will help stretch battery life.

2. While using the camera, avoid the habit of continuously autofocusing and metering the exposure without taking a shot. With a bit of practice, you'll find that you can compose your scenes with minimal power consumption. If you're using a USM lens with a distance scale, you can focus manually to get reasonably close to an accurate distance setting, then just before the shot, tap the AF button

briefly to confirm focus or tweak it if necessary. Also, try Custom Function 4-1 or 4-3, which initiates AF from the AE lock button on the back of the camera. This lets you meter from the shutter button without running the focus motor in the lens. It's not just setting the camera for autofocus from the back button that I'm recommending here. I am also recommending that you cut back as much as possible on autofocus, period. One of the fastest ways to run down a battery is to continually autofocus without taking a shot. Focus manually whenever possible to cut down on power consumption. You might want to consider replacing the standard all-matte focusing screen with one of the optional screens, like Ec-A (microprism) or Ec-B (split-image).

3. Depending on the type of photography you are doing, it may be possible to shoot single frames rather than continuous bursts. This can save power not only in terms of drain on the motor drive, but also in terms of writing data to the memory card.

4. Use a card reader instead of the camera to download captured images to your personal computer or another storage device.

**Q: My EOS 20D in aperture priority mode with manual diaphragm lenses exposes properly at f/2.8 and f/4, begins to overexpose from f/5.6 to f/8, then comes back down around f/11. How can this be possible? Is there a solution besides using an external meter?**

A: The EOS 20D focusing screen is optimized for superior brightness at moderate apertures from about f/3.5 and smaller, compared to conventional ground glass designs. This makes the viewfinder image brighter and easier to focus manually at those moderate apertures, but the trade-off is that it passes disproportionately more light to the metering system. When a Canon EF lens is mounted to an EOS camera, a variable exposure compensation factor (a program curve, not just a fixed compensation factor) for this phenomenon is fed through the system in order to provide correct metering for all apertures. However, when using a non-coupled manual diaphragm lens as you describe, no such communication takes place, so the responsibility for exposure compensation reverts to you. It's unnecessary to use an external meter. Instead, you can take a series of test shots at the working aperture(s) you plan to use, then analyze the test photos to determine the most desirable exposure compensation factor for each aperture. The 20D's auto exposure bracketing (AEB) function speeds up the process of taking the test photos, and you can use the Info palette in Photoshop to determine the most accurate exposure. If you can standardize on one or two particular apertures you plan to use (for maximum sharpness, desired depth of field, etc.), it will simplify the calibration process by eliminating the need for tests at other apertures.

**In the August "Tech Tips" section, a question was made concerning how to extend the battery life of an EOS-1Ds Mark II. I would offer the following observations:**

1) Turn off the auto review of the LCD. Check the LCD manually only when necessary.

2) I would humbly disagree with the one-minute setting for the auto shut off. It takes a burst of energy to fire up the camera. That same amount of energy may actually power the camera for a long period of time after it is up and running. It is akin to gas usage in an automobile. Accelerating to 60 mph uses more gas than maintaining 60 mph. Depending on what one is shooting, one-minute Auto Off may waste a lot of energy while one is changing position. That is to say if it takes 1 minute and 10 seconds to establish the next position, will the 10 seconds of energy savings compensate for starting up the camera?

First of all, thanks for your comments and feedback! I can agree with your first suggestion, although the default two-second review is not very costly in terms of power consumption. I do not agree with your second comment. There are basically five levels of power consumption on an EOS digital SLR. Here they are, from minimum to maximum:

**Level 1.** The camera consumes the least amount of power when the main switch is turned off. A minuscule drain is used in this condition if a memory card is inserted or a lens is changed, but not enough to affect battery life significantly.

**Level 2.** The next level of power consumption occurs when the main switch is on but the camera is asleep, i.e., after the Auto Power Off function has operated. The only significant difference between this condition and level #1 is that the shutter button remains active so that the camera can be "awakened" ASAP by a half-press.

**Level 3.** The next level of power consumption occurs when the main switch is on and the external LCD data panel is active, but the shutter button is not being pressed. This is not a heavy degree of consumption, but it is considerably more than Level 1 or Level 2.

**Level 4.** This level occurs when the shutter button is pressed halfway. In this condition, the metering system is activated, the LCD data panels and viewfinder data display are illuminated, and the focus motor may or may not be driven. If it is driven, the focusing point may be illuminated in the viewfinder and the beeper may sound to confirm focus completion, depending on the lens in use and user-selected camera settings. Level 4 is significantly higher in power consumption than Level 3 but it only lasts six seconds (or less, if you use Personal Function 23) after finger pressure is removed from the shutter button. At default camera settings, Level 4 is also activated for two seconds after each exposure.

**Level 5.** This level occurs when the shutter button is pressed all the way down, initiating a sequence that includes mirror release, diaphragm stop-down, shutter release, diaphragm reopening, and re-cocking of the shutter and mirror. When the camera is set for continuous shooting and AI Servo, you can add focus drive between shots to this sequence. This is the maximum power consumption level for the camera.

Waking the camera up from sleep by tapping the shutter button after the Auto Power Off function has operated essentially takes the camera from Level 2 to Level 3, which is not a big jump in terms of consumption. However, leaving the camera in Level 3 by extending the time limit of the Auto Power Off function will almost always consume more power than letting it go to sleep. Of course, one of the best ways to cut down on battery life is by keeping the camera at Level 4 without taking pictures, which is what I was trying to communicate in last month's "Tech Tips" article.

**If an EOS Digital SLR is set for the center focus point, will the focus track if the subject (or specifically, the exact part of the subject chosen to focus initially) moves in the frame (across other focus points) during a five-shot sequence?**

The only way that can happen with any EOS digital SLR is if the camera is set for the combination of AI Servo and automatic focusing point selection, i.e., letting the camera pick the focusing point for you.

Manually selecting an individual focusing point speeds up AF detection, because the camera doesn't have to decide which focusing point to use, but it puts the responsibility back on you for keeping the focusing point on the subject at all times during single frame photography or continuous bursts. The 1D-class cameras provide an additional option via Custom Function 17, with which you can expand the active area around a manually selected focusing point by a radius of one or two points. This is made possible by the design of the 45-point AF sensor on those cameras. However, the 20D is limited to the nine focusing points you can see in the viewfinder, so if you manually select one of them, you have to make sure that the selected point stays on the subject.

This is usually not a major problem during motorsports photography, because the car is often large enough in the frame that you should be able to track it with a single manually selected focusing point, especially if you're panning to keep the car centered during the burst, as you did in the sample image you sent. Most of the pros I know who shoot cars try to fill the frame.

Bottom line, it's certainly possible to use automatic focusing point selection for motorsports photography, but if you're asking for my opinion, I would recommend using a manually selected focusing point instead. The 20D will do a decent job

on race cars, but the 1D Mark II or newly announced 1D Mark II N is noticeably better for this type of photography.

**Thanks very much for replying. I know how to handle the panning type of shot. At Le Mans, I believe I just pre-focused manually and waited to shoot, but in the kart photo, taken later, I tried to select the focus point manually with AI Servo. I just didn't know if that was the correct procedure or if there was a better way to do it.**

Prefocusing the lens and waiting until the subject enters the frame, then pressing the shutter button down for several frames in a burst is a good way to use a manual focus SLR system, but it's a recipe for disaster with most current AF SLRs because the AF system doesn't get enough "advance warning" to start tracking the subject. All too often, the result is a set of several perfectly exposed but poorly focused blurry shots. Automatic focusing point selection will not solve this problem.

If you want the AF system to help, you need to start tracking the subject for at least a second or two while keeping the shutter button pressed halfway before you start taking pictures. If you intend to "wait and pounce" on the shutter button when the car gets to the area you want to photograph, you might as well shut off the AF altogether and operate the camera as a manual focus system.

**Last week on a job I was using a Canon 550EX speedlight on my EOS 1D MkII. After the first few photos were taken, I noticed on the LCD panel that the camera was simultaneously flashing 1/250 shutter speed at f/22. Some of the photos were completely blown out. I put the camera away and went to my EOS 20D. Next day I tried it again and did not have a problem and I cannot get it to do the same thing again. What did I do wrong?**

What you describe (1/250 and f/22 blinking on the camera) is normal when you try to combine Manual flash exposure mode on the 550EX with Shutter-priority or Program mode on an EOS camera. It's the camera's way of telling you that you've selected an incompatible combination of settings. If you intentionally want Manual flash with your EX Speedlite, the camera should be set for either Aperture-Priority or Manual mode. When Manual flash is combined with Aperture-Priority, the camera will set a shutter speed based on the level of available light, and such shutter speeds can be very slow in low-light and/or small aperture/low ISO situations. It's great for fill-flash, but fill-flash is not optimum in many situations, especially in low light with moving subjects or a hand-held camera. If you want more control, I would suggest combining Manual flash with Manual exposure mode on the camera. This will allow you to set the shutter speed and aperture yourself while maintaining full manual control of flash exposure.

**I've been enjoying your new monthly installment on The Digital Journalist and was hoping you could clue me in a bit on the service process at Canon? I've been having focus issues with my Mark II when shooting sports in dimly lit situations where the AF seems to hiccup, so I've been relying on my 1D. I'd like to get this remedied soon though as the Mark II provides much cleaner shots. In searching the message board on SportsShooter it seems that to have the AF recalibrated, they recommend sending both the body and all the lenses into Canon to be recalibrated. Is that correct? And if that's the case, do I also need to send in my 1D to guarantee consistent results? My other question is directly about the service center and how the service progress works. I'm about two hours from the New Jersey center and was wondering if it's possible to set up a time, say a week or two in advance, and get all the service work done in the same day? I'm currently an intern at a daily paper and can't afford to be without my gear for more than a day so sending everything in for service is pretty much out of the question. Thanks much for any insight.**

We've produced a PDF document called "Camera Handling and Maximum Image Quality" that covers AF issues for EOS-1 class Digital SLRs.

From page 9: "In AI Servo AF, the camera samples the AF detection data at varying rates of frequency depending on the light level. The brighter it gets, the higher the sampling rate and, therefore, AF performance improves. But as light levels drop off, the sampling rate decreases and a point is reached where the tracking ability of the AF system is diminished. In other words, it's unrealistic to expect AI Servo AF to track fast-moving subjects as well in low light as it does in bright light."

The 1D Mark II, especially starting with Firmware Version 1.1.0 and higher, has been optimized for AI Servo AF performance in low light and with low-contrast subjects. We are confident that the AI Servo AF performance of the 1D Mark II with Firmware Version 1.1.0 and higher matches or exceeds the AI Servo AF performance of the original EOS-1D when all else is equal. Naturally, light levels are not the only issue, but they can't be ignored.

On a related topic, AF tracking performance is clearly a separate issue compared to AF accuracy. This becomes an important distinction when you take into account the fact that the Service Department can check AF accuracy, but they cannot check AF tracking performance. Essentially, they (and we) rely on the concept that as long as AF is accurate on a static subject, tracking performance is expected to perform accurately up to its limits, which can and do vary based on a wide range of factors including light levels.

If you feel that your EOS equipment is not focusing correctly on static subjects, then it makes sense to have the equipment examined by Canon Factory Service Center technicians. The FSC starts by checking the performance of the camera

bodies with a "tool lens," i.e., a lens that is known to perform well within design specifications for AF accuracy. Once the cameras have been calibrated with the tool lens, it becomes possible to check the performance of individual lenses owned by the customer. Since the lenses contain their own CPUs, they can also be adjusted if necessary.

As a general rule of thumb, we don't necessarily advise sending in any equipment until you have had a chance to perform your own tests with static subjects to determine whether your focusing issues are camera-related, lens-related, or both. Like it or not, the only way to find out is to test the equipment. Of course, the FSC can do that for you, but any sample images you can provide that illustrate the problems being claimed may be helpful in diagnosing them.

I would suggest that you contact Canon's Jamesburg Factory Service Center at 732-521-7886 to determine the best possible turnaround times, once you have determined which items need to be checked. Please provide your CPS number when you call.

**I am a professional photographer based in Boston and I shoot with the 1D Mark II camera. I was using the ST-E2 unit with the 550EX flash that was being held by an assistant. I had a problem with this setup today as the flash unit would only fire every other time. I don't use this lighting setup very often and didn't have time to bone up on both manuals as I decided on this lighting at the last minute before photographing two people on a location who only had 10 minutes. Can you offer an explanation to this?**

Not having been there, I can only speculate on what might have happened. One thing to watch for is making sure the transceiver on the front of the 550EX is pointing towards the ST-E2. When the 550EX is in front of the camera, this sometimes requires swiveling the flash head 180 degrees so that the receiver is pointing towards the camera while the flash is pointing towards the subject. You also have to be within range of the ST-E2, which can be anywhere from 11.5 feet to 33 feet, depending on the angle of the receiver to the ST-E2. Last but not least, it's important to have fresh batteries in both units. For professional use, I would suggest connecting a Compact Battery Pack CP-E3 to the 550EX to cut down on recycling time and provide more flashes per charge.

**I have a 1D and a 1D Mark II, both of which came with FireWire cords. I'm fine when I'm using my desktop computer at home, but on the road I take my laptop, which only has USB ports and a small (4-pin, I believe) FireWire port. So far I haven't figured out how to connect my cameras to my laptop. Any suggestions or workarounds?**

I, too, have been faced with this issue since one of my laptops has a 4-pin FireWire port. There are various 6-to-4-pin FireWire plug adapters available that look like they should work, but I haven't found any that do. However, all of the Canon cables I've tried seem to work fine. In your particular case, here is what I would recommend:

1. For the EOS-1D, use the IFC-200D4 cable that came with the 1D Mark II. The 4-pin end goes to your computer while the 6-pin end goes to the 1D.
2. For the EOS-1D Mark II, use either the optional IFC-200D44 or the optional IFC-450D44 cable. These are 4-to-4 pin cables that differ only in length (2 meters or 4.5 meters). You can order them from most dealers who carry EOS-1D-class digital SLRs.

**When shooting longer time exposures such as those in the 30 second and longer range with EOS-1D Mark II, it seems to really take it out of the battery quick. I was pretty sure I had a fairly fresh battery in and after shooting 40-50 exposures in this manner, it was done. Normally, the batteries last for weeks. Just wondering if it takes more out of the battery than normal use. Seems like it would. Sensor is active so much longer. Just wanted to know if it was my imagination or not. I also was using the reduced noise mode with those time exposures. Very pleased with the photos by the way.**

With the 1D Mark II, a fully-charged battery should last for approximately three hours' worth of time exposures, which could very well turn out to be only 40 to 50 shots depending on how long each exposure is.

**I own the 20D and 580ex flash and absolutely love both. I want to use the custom function #8 Quick flash at a wedding and wanted to know if there is any loss of flash power when in the quick flash mode. Specifically, will the flash consistently reach the subject with enough power to light up? I understand this mode may use considerably more battery power.**

In QuickFlash mode (i.e., when the green LED is on while the flash is recycling), the 580EX is only partially recharged and cannot provide a full-power burst. You can still get a good exposure as long as you are within the usable distance range for the power that's available, which can be anywhere from 1/16 to 1/2 power. It ultimately depends on how you shoot. For faster recycling and more flashes per set of batteries, use a relatively high ISO like 400 or 800, choose a moderate

aperture like f/5.6 instead of f/8 or f/11, get close to your subject (5 feet is much better than 15 feet, for example), and avoid the use of bounce flash or diffusers. I would also suggest the use of an external powerpack like our Compact Battery Pack CP-E3 with fresh lithium or NiMH AA batteries. You can check the accuracy of your flash exposures on the camera's LCD screen, or watch for the flash exposure confirmation signal on the back of the 580EX after each shot.

**I recently purchased a 1D Mark II N to go with my Mark II. I set my sharpness and contrast on the Mark II at 3 and 1, respectively. I have set my II N on the Standard picture setting without any custom adjustments. I'd like the cameras to be as close to harmonious as possible without too much trial and error. Can you provide any insight?**

Also, in one of your columns you provided some rough guidelines for Unsharp Mask (300%, 0.3 pixel radius and 0 pixel threshold for letter-sized prints). Can you elaborate a bit? Do these vary with the size of print?

The answer to the first question largely depends on your personal preferences. If you shoot RAW images, then you can match the output from both cameras by applying the same settings for sharpness, contrast, etc. in your RAW conversion software. DPP 2.0.3, the current version of Canon's Digital Photo Professional software, makes this very easy with its Picture Style settings which can be applied to RAW data from any compatible EOS digital SLR, including the 1D Mark II and the 1D Mark II N.

If you prefer to use a JPEG workflow, i.e., shooting in-camera JPEGs, it's not quite as easy to match image quality between these cameras because the 1D Mark II's sharpening algorithm and range of settings differs slightly from that of the 1D Mark II N. For example, the EOS-1D Mark II has sharpness settings from 0 to 5 with 0 as the standard default, whereas the EOS-1D Mark II N has sharpness settings from 0 to 7 with 3 as the standard default. The contrast and saturation settings are different for both cameras as well, with a range of settings from -2 to +2 or Low to High on the 1D Mark II versus a range of settings from -4 to +4 on the 1D Mark II N. If, as you say, you are happy with a sharpness setting of 3 and a contrast setting of +1 on your 1D Mark II, then as a starting point you might want to try a sharpness setting of 3 or 4 and a contrast setting of +1 or +2 on your 1D Mark II N. I would suggest shooting a set of comparison images with both cameras and tweaking the sharpness and contrast settings on the 1D Mark II N until you are satisfied with the results.

The Unsharp Mask settings that we published in the Camera Handling & Maximum Image Quality PDF (Amount: 300%, Pixel Radius: 0./3, Threshold: 0) were clearly stated to be "a very rough guideline for high-quality inkjet-printed output at A4 or letter size." These settings can also be considered as our suggestion of a starting point for customization according to other factors. Such factors would include variations in final output size as well as the distinction

between images that are intended to be printed versus those that are intended for viewing on a computer monitor. Additional factors are differences in resolution between various camera models and most importantly, differences in personal taste. Generally speaking, the higher the resolution of the image, the higher you can go in terms of the amount setting in Unsharp Mask before the effects of oversharpening start to appear. Also, different types of subject matter can benefit from different approaches to sharpening. For instance, detailed landscapes usually look better to most people when those images are heavily sharpened, whereas portraiture often looks better when sharpening is reduced, or when it is limited to specific portions of the image such as the eyes. Hope this helps!

### **Does Canon maintain a feedback channel for customer comments and improvement suggestions of its camera products?**

Yes. Here is the procedure for registering comments, suggestions, and operational questions:

1. Be sure to disable (temporarily) any active pop-up blockers in your Web browser.
2. Visit [the home page for Canon USA Consumer Products Support](#).
3. Use the pulldown menus to locate the desired product, for example:

Category: EOS (SLR) Camera Systems  
Product Type: Digital EOS Cameras  
Model: EOS 5D

Once you've selected a camera on the list, the Support Index page for that product will appear.

4. Click on "Support by E-Mail" on the Support Index page. A new page with an on-line form will appear. Please submit your comments, suggestions or questions in the space provided. Once your input is received, a Canon Customer Support Representative will respond.

**As one example, the "Custom shooting mode setting on the new EOS 5D certainly makes use of mirror lock-up easier, although better access to this often used function has been wished for in forum discussions for years. In addition, the momentary appearance of the current ISO setting in the 5D viewfinder (including newly dialed ISO changes) is a great improvement, and has also been requested through many model and firmware upgrades. I have some additional comments and suggestions concerning the 5D, which might be implemented via future firmware updates, but no specific place to share them.**

I note where customers have called on you to voice their opinions in the past. I appreciate your efforts on our behalf, but have some reluctance to burden you with this feedback.

Not a problem. I am always pleased to receive constructive feedback on Canon photographic products! It's part of my job to forward feature requests, new product suggestions, and other user concerns to the Product Development Center at Canon Inc. However, the online e-mail support procedure outlined above is another way to voice your comments as well. Please feel free to use it at your convenience.

**In DPP 2.0 there is a sharpness slider in the Raw Image Adjustment window that goes from 0 to 7, and there is a sharpness slider in the RGB Image Adjustment window that goes from 0 to 500. I am unable to find any explanation of the differences in those two sliders. Can you assist? Thank you.**

In Digital Photo Professional software, the RAW Image Adjustment window supports RAW images only, whereas the RGB Image Adjustment window supports RAW, JPEG and TIFF images, as mentioned on page 2-6 in the DPP instructions. If you are working with a JPEG or TIFF image, you cannot use the RAW Image Adjustment window and are therefore limited to the RGB Image Adjustment window. If you are working with a RAW image, you can use both windows. Assuming that's the case, there is no difference in terms of the sharpening algorithm between the RAW Image Adjustment window and the RGB Image Adjustment window, but as you point out, there is a difference in the number of increments. Incidentally, it's 0 to 10 for the RAW Image Adjustment window rather than 0 to 7 as it is on the EOS 5D and 1D Mark II N, but you are correct that it is 0 to 500 for the RGB Image Adjustment window. The choice between the two is up to you, but the RGB Image Adjustment window offers a finer degree of control over sharpness than the RAW Image Adjustment window.

**I just got a new 1D Mark II N, and am in a bit of a panic regarding its low-light autofocus lag. In a two-lamps and TV lit room, my 20D snaps objects into focus with both my 28-70L lens and my 100 2.8 macro (both Canon, of course). The new 1D Mark II N actually takes about one second on all of the same objects. It is fine in high light, but it actually takes about a second or more to lock on the same objects upon which the 20D with these lenses locks almost instantly. Both are in the center-square focus point, P-mode, same ISO, single-shot, etc. ... I'm about to panic. Any info, including if that means a suggestion to have it sent in, will be appreciated. I was expecting at least the same performance as my 20D, and it is acting a bit like a fast D60.**

One of the differences between the 9-point AF sensor used in the 20D versus the 45-point Area AF sensor used in the EOS-1D class cameras is the size of the

individual pixels on each. The pixels on the 45-point AF sensor are much smaller than those on the 9-point AF sensor, and one inevitable result of this difference is superior low-light sensitivity for the 9-point sensor. This is reflected in the specifications for each camera, which state the 20D's AF sensitivity at EV -0.5 compared to EV 0 for the 1D Mark II N.

However, when considering the overall performance of these cameras, any fair comparison will show that in most light levels other than extreme low light, the 45-point AF sensor is much faster than the 9-point sensor in terms of tracking subject movement, and there is no question that it covers a far greater percentage of the picture area. Moreover, it has 7 cross-type focusing points to the 20D's single cross-type focusing point. Last but not least, the low light AF performance of both cameras can be enhanced with an AF Assist beam, whereas the coverage and tracking speed of the 20D's AF sensor cannot equal the 45-point AF sensor under any circumstances.

Ultimately, the choice is yours, but the kind of photography you do should make a difference. Unless you do a lot of your work in extremely low light without an AF Assist beam, there's really no problem with the performance of the 1D Mark II N's AF sensor.

**I'm getting ready to sell what has long been my favorite travel lens: the Canon 28-135 IS. I have noticed that, on occasion (usually in colder weather) the IS system will cause the viewfinder image to vibrate at a very high frequency and emit a sound similar to a vibrating pager or cell phone. I've owned more than one copy of this lens and they have all done this on occasion. I also see questions about this phenomenon occasionally in different forums but never an explanation. Is this a malfunction of the IS or just something that can happen to a properly functioning lens under certain circumstances? I don't want to sell someone a broken lens and I can't seem to get through to anyone at a Canon Factory Service Center who is knowledgeable enough to even guess one way or the other.**

The image stabilizer mechanism in any Canon IS lens operates by means of a set of electromagnets surrounding a group of movable lens elements. It's usually possible to feel a vibration through the barrel of the lens or hear an operational noise while the stabilizer is running, although in the case of the EF 28-135 IS, the mechanism is virtually silent due to its relatively small size. If this is all that's happening (i.e., you are feeling a vibration through the lens barrel or hearing a slight operational noise while the image stabilizer is running), it is completely normal and nothing to worry about.

A vibrating image in the viewfinder is another issue altogether. Like you, I have noticed (and documented) the fact that specifically with the EF 28-135 IS lens, the viewfinder image occasionally tends to vibrate at high speed while the stabilizer is running. However, in my observations, this occurs only when the

camera is set for AI Servo AF, and then only with certain EOS digital SLRs like the original EOS-1Ds. I don't think that temperature has anything to do with it. If the viewfinder image vibrates at high speed while the stabilizer is running, I would suspect that the camera rather than the lens might be the root cause of the problem. Regardless of where the problem lies, it would be best to have both the camera and the lens examined by a Canon Factory Service Center technician to make sure that it is properly repaired.

**I just got the EOS-1D Mark II N and everything is fine except that the file number jumped by about 7300 suddenly. It seems to have coincided with attaching my EF Extender 1.4X plus my EF70-200L IS zoom lens. The number went from 0045 to 7368 or so. Is there a fix coming for this? I can't see any BIOS update for this camera yet. My photography business depends on unique file numbers so this will be a problem. Please let me know what I should do.**

This usually happens when another memory card is used after the first shot was taken, and this second card has digital images with higher file numbers on it. Like any previous EOS digital SLR, the new EOS-1D Mark II N looks to two things before establishing a file number -- it already knows the most recent number assigned by the camera (whether it was a moment ago, or months ago), and it also examines the contents of the active memory card to see if it detects any files on the card. If so, it compares the highest file number on the card to the most recent file number assigned by the camera, then selects the higher of the two and adds "1" to it. I can't say what happened in your situation, but this is the only way a properly-working system would "jump" file numbers like that. And be aware, regardless of whether your system is set to Continuous file numbering or Auto Reset, in the scenario I mention here, every subsequent number would be in sequence with the suddenly-higher sequence, even if you changed back to a card with lower numbers you'd shot moments before. The system is designed this way to prevent the possibility of writing duplicate file numbers on the same memory card.

If unique file numbering or filenames are important to you, then your best bet will be to rename your files according to your personal preferences. This can happen either during the downloading process, or after the files have been downloaded to your computer. Canon supports both methods with the software that is supplied with the EOS-1D Mark II N. Use ZoomBrowser EX (Windows) or ImageBrowser (Mac OS X) to rename files during the download process, or Digital Photo Professional (Mac/Windows) to rename files that have already been downloaded.

**I have the Canon EOS-1Ds Mark II. I have a job to shoot oil rigs in Calgary ... cold weather. Does anyone have any experience using digital SLRs in freezing and near 0 degrees?**

Ah, the notorious "cold weather" question...Hard to believe we're on the verge of another winter season here in North America. Here are some timely "Tech Tips" for winter shooting with digital cameras:

As noted in the instruction books, the limit for guaranteed low temperature operation with any EOS digital camera is 0 degrees Celsius. However, a lot of people have been successful using our cameras in sub-freezing temperatures, as long as they observe the following precautions against condensation and poor battery performance. Here's some background info on cold weather operation:

**SHUTTER LUBRICATION:** Older cameras like the Canon F-1 had heavy-duty shutter mechanisms that required special modifications in lubrication for cold-weather use. Today's digital SLRs do not require any special lubrication, because their shutters use newer designs with high-performance, lightweight blades and smaller magnets. In terms of shutter performance, no special modifications are necessary for cold-weather use.

**CONDENSATION:** Even though EOS-1 class digital SLRs are well protected against moisture in the form of rain and snow, etc., they are vulnerable to severe internal damage from condensation, like all other digital cameras. That's the main reason why we recommend placing cameras, including but not limited to EOS Digital SLRs, in airtight plastic bags before bringing them from a cold environment to a significantly warmer one. This allows the condensation to form on the bag, thus protecting the equipment as much as possible.

**BATTERY PERFORMANCE:** Battery performance drops off as the temperature falls below freezing. Nickel metal hydride and lithium-ion battery packs are better than alkaline batteries in this situation, but even the lithium-ions will eventually stop working once they've chilled long enough. By now, at least one 3rd-party developer (Digital Camera Battery) has produced an external battery that can connect to the EOS-1 class digital SLRs through the supplied DC Coupler, but I don't expect Canon Inc. to either condone this or to make one of their own. In the meantime, the best strategy is to carry a few fully charged spare NP-E3 packs inside your coat, where they can be kept warm and exchanged for the cold batteries from time to time as necessary.

Memory cards are another potential weak link. Canon doesn't make its own, so it's best to check with the card manufacturers and other photographers to get a cold weather rating.

As with current film-based electronic cameras, items such as LCD data displays are the only means available to indicate camera settings such as shutter speeds, apertures, frame count, etc. Digital cameras add another type of LCD for use as a playback monitor. The information normally seen on these displays tends to disappear when temperatures drop below -20 degrees Celsius. LCDs usually start working again when the temperature goes above freezing, but that won't do you much good out in the cold.

Bottom line, it's certainly possible to use professional digital SLRs in freezing conditions, as long as they are handled correctly. The main issues are condensation and adequate battery power, but with a bit of advance planning these obstacles are not insurmountable.

However, there's not much that can be done with existing technology to ensure consistent digital camera performance in severely cold conditions for the reasons outlined above. You are welcome to try EOS digital SLRs in sub-freezing temps, but keep in mind that you're bound to run into some limitations eventually.